



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,642	02/09/2004	Richard B. Philips	83651	8794
23523	7590	11/10/2004	EXAMINER	
NAVAL UNDERSEA WARFARE CENTER			OLSON, LARS A	
DIVISION NEWPORT			ART UNIT	PAPER NUMBER
1176 HOWELL STREET, CODE 000C			3617	
BLDG 112T				
NEWPORT, RI 02841			DATE MAILED: 11/10/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/774,642	PHILIPS ET AL.
	Examiner Lars A Olson	Art Unit 3617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on \_\_\_\_.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-6,9,10,12 and 15-18 is/are rejected.

7)  Claim(s) 7,8,11,13 and 14 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 09 February 2004 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 02092004.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date.       .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other:       .

## DETAILED ACTION

### ***Claim Objections***

1. Claim 13 is objected to because of the following informalities: Claim 13 does not end with a period, and is thus possibly incomplete. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 3,191,572) in view of Rizzo (US 4,393,802).

Wilson discloses a multi-hull surface vessel, as shown in Figures 1-6, that is comprised of a main hull, defined as Part #12, at least two lateral hulls, defined as Parts #11 and 13, that are disposed on opposite sides of said main hull with a surface deck, as shown in Figure 1, disposed therebetween, a means for generating power for said vessel in the form of an engine, defined as Part M, and a means for reducing drag on said lateral hulls in the form of a plurality of openings, defined as Parts #28, 29 and 30, for introducing air bubbles under pressure beneath said hulls of said vessel.

Wilson, as set forth above, discloses all of the features claimed except for the use of a means for reducing drag on a hull in relation to a power generating means.

Rizzo discloses a vessel, as shown in Figures 1-10, that is comprised of a hull, defined as Part #12, a means for generating power in the form of an engine, defined as Part #61, and a means for reducing drag on said hull in the form of a plurality of conduits, defined as Parts #66, 68, 70, 72, 74 and 76, that connect said engine with a plurality of exhaust ports, defined as Parts #18, 20, 22, 24, 62 and 64, in order to direct exhaust from said engine beneath said hull.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to utilize a means for reducing drag on a hull in relation to a power generating means, as taught by Rizzo, in combination with the multi-hull vessel as disclosed by Wilson for the purpose of providing a multi-hull vessel with a means for reducing drag on a pair of lateral hulls by introducing exhaust gas directed from an engine beneath said hulls.

4. Claims 1-6, 9, 10, 12 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Rizzo, and further in view of Takahashi et al. (US 6,092,480).

Wilson in combination with the teachings of Rizzo shows all of the features claimed except for the use of a plurality of microbubble injectors that are disposed on subsurface areas of said hulls of said vessel.

Takahashi et al. discloses a vessel, as shown in Figures 3 and 6, that includes a plurality of microbubble injectors, defined as Part #6 or 13, that are disposed on subsurface areas of the hull of said vessel in order to reduce skin-friction on the hull of said vessel.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to utilize a plurality of microbubble injectors disposed on subsurface areas of a hull of a vessel, as taught by Takahashi et al., in combination with the multi-hull vessel as disclosed by Wilson and the teachings of Rizzo for the purpose of providing a multi-hull vessel with a means for reducing drag on a pair of lateral hulls by introducing microbubbles of exhaust gas directed from an engine beneath said hulls.

***Allowable Subject Matter***

5. Claims 7, 8, 11, 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takahashi et al. (US 6,145,459) discloses a vessel with a means for reducing skin-friction on the hull of said vessel by generating bubbles by blowing gas beneath the hull of said vessel. Bredt (US 4,031,841) discloses a multi-hull vessel with a means for generating an air film beneath the hulls of said vessel in order to reduce drag on the hulls of said vessel.

7. Any inquiry concerning this communication from the examiner should be directed to Exr. Lars Olson whose telephone number is (703) 308-9807.

lo

November 2, 2004

LARS A. OLSON  
PATENT EXAMINER

*Lars Olson*  
11/2/04